

Trend Study 25C-6-98

Study site name: Terza Flat .

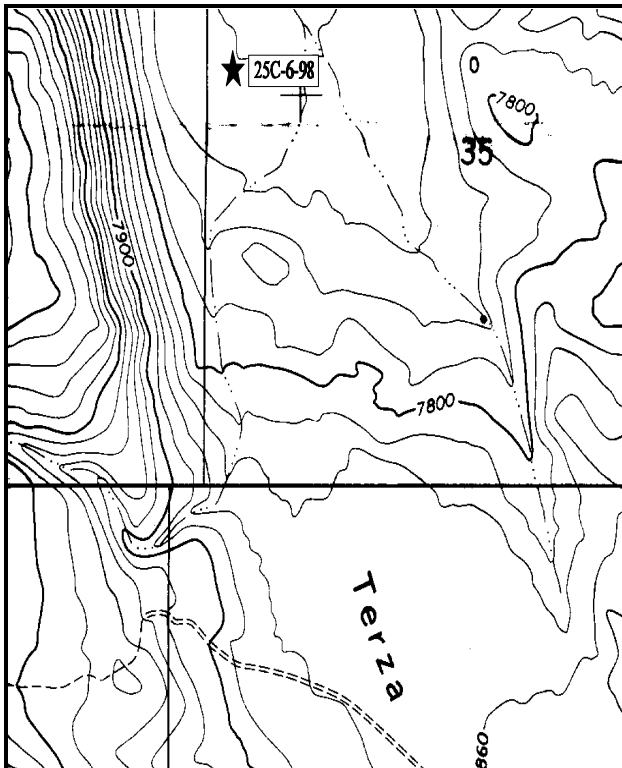
Range type: Snakeweed .

Compass bearing: frequency baseline 180 degrees.

Footmark (first frame placement) 5 feet. Frequency belt placement; line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

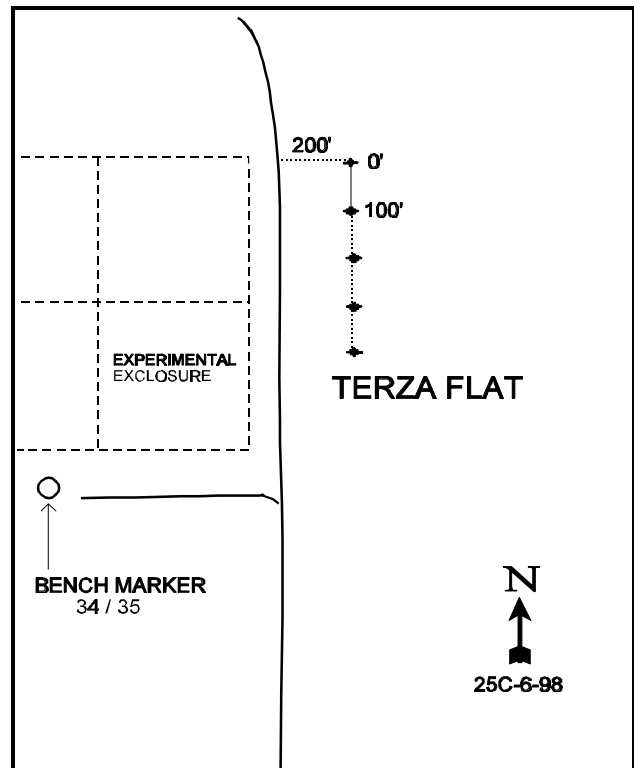
LOCATION DESCRIPTION

Turn south at the curve in SR24 in the middle of Loa. After 0.85 miles turn west on a gravel road. Continue on this road for 3.3 miles as it turns and heads south past the road to the dump and the road to a TV tower. Turn left at the intersection and go 0.5 miles. Bear left at the fork. Proceed 2.95 miles then turn left. Go 2.2 miles and turn left again. Go 0.475 miles to a section marker post on the east side of the road. Continue 0.875 miles to a BLM experimental enclosure. Drive to the northeast corner of the enclosure. The 0-foot end of the baseline is 200 feet east of the corner in line with the fence. The 0-foot stake is a fencepost with a browse tag #7178 attached. The other stakes are marked by rebar.



Map Name: Moroni Peak, Utah

Township 29S , Range 2E , Section 35



Diagrammatic Sketch

UTM 4242904.180 N , 441560.364 E

DISCUSSION

Trend Study No. 25C-6 (44-6)

The Terza Flat study is on BLM land which was reportedly the most abused site encountered during the 1985 field season. An experimental exclosure located near the transect contains vigorous stands of winterfat and sagebrush where livestock have been excluded. In contrast, Russian thistle, snakeweed, halogeton, and narrowleaf low rabbitbrush are dominate outside the exclosure. Sheep are allowed to graze the allotment each winter, followed by cattle each spring. Antelope are present in the area year-round. Pellet group data from the site in 1998 estimate 56 deer, 9 elk and 3 cow days use/acre. Sheep sign was also noted in small numbers. It was difficult to differentiate between antelope, deer and sheep sign on this site. Deer days use also includes some antelope. Rabbits are also present in high numbers. A colony of Utah prairie dogs was reported to be present 1/4 mile southeast of the Terza Flat study site in 1985.

The soil is moderately deep with an effective rooting depth (see methods) of 14 inches. There may be a hardpan between 12 to 18 inches below the surface. Soil texture is a sandy clay loam with a neutral pH (7.2). Phosphorus may be limiting to plant growth and development at 7.7 ppm, when 10 ppm is considered to be the minimum. There are a few large rocks on the surface, but erosion pavement is abundant and currently ('98) provides 37% cover. Percent bare ground is also high, increasing from 29% in 1985 to 44% in 1998. Although ground cover is highly variable and the soil cover broken, soil movement and erosion is kept to a minimum by the levelness of the terrain. Wind erosion could be a factor when the surface is sufficiently disturbed.

This site is dominated by invaders and increasers. Together, the increaser forbs and shrubs make up 88% of the total vegetative cover in 1994 and 77% in 1998. The dominant browse plants, as determined by the percent total vegetative cover in 1998 are: narrowleaf low rabbitbrush (62%), Wyoming big sagebrush (13%), and black sagebrush (6%). Winterfat is also an important browse species on the site but plants are small, measuring only 3 inches in height. Total cover of winterfat is less than 1/2 of 1%. Judging from scattered stumps found throughout the area, Wyoming big sagebrush was once the dominant species in the area, but has now declined to only 520 plants/acre by 1998 with it's present patchy distribution. This patchy distribution has partially contributed to the changes in population between 1991 and 1994 when a larger sample was used to give a better estimate of population density. The Wyoming big sagebrush plants were moderately to heavily hedged in 1991 but more lightly used in 1994 and 1998. The larger sample also picked up some black sagebrush in 1994 and 1998. There were only 360 plants/acre estimated in 1998, but use was heavier on the black sagebrush compared to the Wyoming big sagebrush.

Winterfat appears to have a stable population of around 1,000 plants/acre. Utilization was heavy in 1991 but more moderate in 1994 and 1998. Vigor is normal on most plants and percent decadence currently low at only 1%. Fourwing saltbush appears to be declining. In 1991, 100% of the fourwing were heavily hedged and all were considered decadent. Density declined by 57% from 932 plants/acre to 400 between 1985 and 1991. Density continued to decline by 1994 and 1998 to only 200 and 80 plants/acre respectively. Use was heavy in 1994, although mostly light to moderate in 1998. Winterfat is as dense in the livestock exclosure as rabbitbrush is on the outside. Plants are large and vigorous measuring about 12 inches in height.

Fringed sagebrush increased it's density between 1985 and 1991, from 5,933 plants/acre to an incredible 35,799 by 1991. This population then decreased partly due to the larger sample used in 1994 and 1998, to 4,260 and then 1,320 plants/acre.

Narrowleaf low rabbitbrush and broom snakeweed are increasers of little value and both increased substantially in 1991. By 1994, rabbitbrush increased by 300%, while broom snakeweed declined 96%. Density of broom snakeweed continued to decline to only 120 plants/acre by 1998. Rabbitbrush also declined from 12,460 plants/acre to 10,920 by 1998. There may have been some identification problems with these two similar looking species in the past.

Composition of the herbaceous vegetation is extremely poor. Russian thistle and halogeton dominate the site. Halogeton was noted growing only along the road and was not encountered on the frequency belts or the density plots in 1985. By 1994, halogeton had spread throughout the site and had a quadrat frequency of 32%. Nested frequency declined significantly by 1998, but halogeton is still the most numerous herbaceous plant on the site. Locoweed (*Astragalus* spp.) and one low fleabane were the only other perennial forbs found on the transect. Grasses are rare and only two species were encountered in 1998, bottlebrush squirreltail and Indian ricegrass. Grasses provide less than ½ of 1% cover on the site.

1985 APPARENT TREND ASSESSMENT

Although there is a lot of bare soil and pavement exposed, the soil trend is basically stable because of the levelness of the terrain. Vegetative trend is downward. Desirable herbaceous perennials have been almost totally replaced by Russian thistle, an annual. The desirable browse species are being replaced by low-value invaders and increasers. This site should be rested from livestock grazing to allow the vegetative community to heal while there is still seed within the native seed bank for desirable browse species.

1991 TREND ASSESSMENT

The soil trend would have to be considered slightly downward because percent cover for pavement and bare ground have both increased, while litter cover decreased from 35 to only 13%. The more desirable species, Wyoming big sagebrush and winterfat, have contradicting changes in trend. The Wyoming big sagebrush has increased by 39%, up to 3,732 plants per acre, while winterfat has decreased by 36%, now down to only 466 plants per acre. Twenty-nine percent of the winterfat is decadent and is not reproducing. Overall, there was a gain in browse, but low rabbitbrush and broom snakeweed both increased by a remarkably large 62% and 93% respectively. The trend for browse is going down with the large increases for weedy increaser species. There is only one perennial grass, bottlebrush squirreltail, which is quite small and only has a quadrat frequency of 21%. The forbs are mostly weedy invaders. Russian thistle has decreased significantly in nested frequency from 216 down to 41, which would have to be considered an improvement. However, halogeton has invaded the site and now has a nested frequency value of 74. The trend for the herbaceous understory is considered downward.

TREND ASSESSMENT

soil - slightly downward

browse - downward

herbaceous understory - downward

1994 TREND ASSESSMENT

The soil trend now appears to be slightly improving with decreasing values for bare ground and rock cover with a slight increase in litter cover. Density of the key browse, Wyoming big sagebrush, declined from 3,732 plants/acre to 440, while winterfat density increased 58%, from 466 to 1,120 plants/acre. Fourwing saltbush also declined in density from 400 to 200 plants/acre. The larger sample used in 1994 is responsible for most of the changes in density. Shrubs on this site, especially sagebrush, occur in scattered clumps. The new, larger sample better estimates shrub populations which have this type of distribution. With this in mind, the key browse species appear to have stable populations. Wyoming big sagebrush displays lighter use and no decadence. Fourwing and winterfat also show lighter use and improved decadency rates. Increasers, narrowleaf low rabbitbrush and broom snakeweed, appear to have been misidentified during past readings. Combined, these species had a density of 25,264 plants/acre. This high density has declined to 13,760 plants/acre by 1994. These species are widespread over the whole site and density estimates between the old and new, larger sample should be comparable. With all of this in mind, trend for browse is stable. Trend for the herbaceous understory is stable but with continued dominance by weedy species. Grasses are rare and produced less than ½ of 1% cover. Forbs are also lacking and dominated by halogeton and Russian thistle which provide 99% of the forb cover.

TREND ASSESSMENT

soil - slightly improving

browse - stable

herbaceous understory - stable

1998 TREND ASSESSMENT

Trend for soil is down slightly with an increase in percent bare ground and pavement cover combined with a slight decline in litter cover. Erosion is not a problem however, due to the level terrain. Trend for the key browse species, black sagebrush, Wyoming big sagebrush, and winterfat appears stable. Use of these species is moderate, vigor is good and decadence low. Fourwing saltbush does appear to be declining however. One positive trend indicator is the decline in abundance of narrowleaf low rabbitbrush and broom snakeweed. Rabbitbrush still has a high number of seedlings and young however. Trend for the herbaceous understory is stable even with a decline in the sum of nested frequency of forbs. Nested frequency of halogeton and Russian thistle have both declined significantly which is an improvement, but there are no forbs or grasses to replace them.

TREND ASSESSMENT

soil - down slightly

browse - stable

herbaceous understory - stable, but severely depleted

HERBACEOUS TRENDS --

Herd unit 25C, Study no: 6

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'85	'91	'94	'98	'85	'91	'94	'98	'04	'08
G	Oryzopsis hymenoides	-	-	-	2	-	-	-	1	-	.00
G	Sitanion hystrix	_a 17	_b 50	_{ab} 41	_{ab} 36	10	21	18	18	.44	.39
Total Annual Grasses		0	0	0	0	0	0	0	0	0	0
Total Perennial Grasses		17	50	41	38	10	21	18	19	0.43	0.39
F	Astragalus spp.	8	5	4	-	3	2	2	-	.01	-
F	Chenopodium fremontii (a)	-	-	7	-	-	-	4	-	.02	-
F	Descurainia spp. (a)	-	-	-	1	-	-	-	1	-	.01
F	Draba spp. (a)	-	-	4	-	-	-	2	-	.01	-
F	Erigeron pumilus	2	2	-	-	1	1	-	-	-	-
F	Halogeton glomeratus (a)	_a -	_{bc} 74	_c 97	_b 69	-	32	32	20	2.83	1.65
F	Lappula occidentalis (a)	-	-	-	7	-	-	-	3	-	.01
F	Polygonum douglasii (a)	-	-	4	-	-	-	1	-	.00	-
F	Salsola iberica (a)	_c 216	_b 41	_b 55	_a -	76	20	17	-	1.01	-
Total Annual Forbs		216	115	167	77	76	52	56	24	3.87	1.67
Total Perennial Forbs		10	7	4	0	4	3	2	0	0.02	0

Values with different subscript letters are significantly different at % = 0.10

BROWSE TRENDS --
Herd unit 25C, Study no: 6

Type	Species	Strip Frequency		Average Cover %	
		'94	'98	'94	'98
B	Artemisia frigida	50	27	.56	.78
B	Artemisia nova	7	8	.36	.96
B	Artemisia tridentata wyomingensis	13	15	1.05	2.27
B	Atriplex canescens	9	4	-	-
B	Ceratoides lanata	29	30	.15	.37
B	Chrysothamnus viscidiflorus stenophyllus	77	79	7.21	10.93
B	Gutierrezia sarothrae	25	5	.23	.09
B	Opuntia spp.	0	0	-	-
B	Rosa woodsii	0	0	-	-
Total for Browse		210	168	9.56	15.42

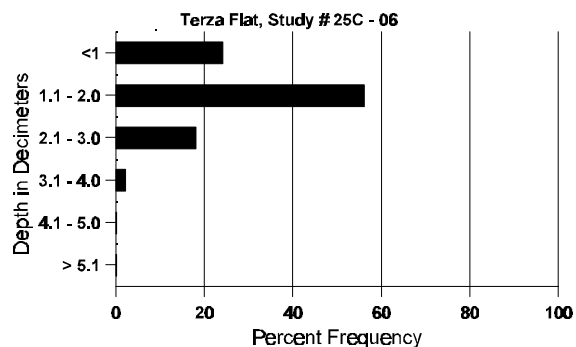
BASIC COVER --
Herd unit 25C, Study no: 6

Cover Type	Nested Frequency		Average Cover %			
	'94	'98	'85	'91	'94	'98
Vegetation	233	225	2.50	6.50	13.80	17.43
Rock	277	216	2.50	3.75	6.61	6.38
Pavement	355	365	30.50	38.25	25.40	30.49
Litter	351	351	35.25	13.25	16.29	12.10
Cryptogams	7	31	0	0	.01	.20
Bare Ground	360	349	29.25	38.25	33.95	43.59

SOIL ANALYSIS DATA --
Herd Unit 25C, Study # 06, Study Name: Terza Flat

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
13.7	58.6 (13.0)	7.2	50.0	25.4	24.6	1.4	7.7	128.0	.6

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 25C, Study no: 6

Type	Quadrat Frequency '84 '88	
Rabbit	74	64
Elk	4	6
Deer	15	51
Cattle	-	1
Antelope	5	1

BROWSE CHARACTERISTICS --

Herd unit 25C, Study no: 6

A Y G R E	Form Class (No. of Plants)	Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total								
		1	2	3	4		5	6		7	8	9	1	2	3	4	
Artemisia frigida																	
S	85	7	-	-	-	-	-	-	-	-	7	-	-	-	466		7
	91	14	-	-	2	-	-	2	-	-	18	-	-	-	1200		18
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	98	212	-	-	-	-	-	-	-	-	212	-	-	-	4240		212
Y	85	9	-	-	-	-	-	-	-	-	9	-	-	-	600		9
	91	115	1	-	30	-	-	6	-	-	152	-	-	-	10133		152
	94	8	-	-	-	-	-	-	-	-	8	-	-	-	160		8
	98	6	4	3	2	-	-	-	-	-	15	-	-	-	300		15
M	85	80	-	-	-	-	-	-	-	-	80	-	-	-	5333	11 12	80
	91	236	22	4	101	3	-	15	-	-	381	-	-	-	25400	4 6	381
	94	146	-	-	3	-	-	-	-	-	149	-	-	-	2980	2 4	149
	98	36	8	-	5	1	-	-	-	-	50	-	-	-	1000	4 6	50
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	91	1	-	2	1	-	-	-	-	-	3	-	1	-	266		4
	94	56	-	-	-	-	-	-	-	-	17	-	-	39	1120		56
	98	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	980		49
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'85		00%			00%			00%			+83%						
'91		05%			01%			.18%			-88%						
'94		00%			00%			18%			-69%						
'98		20%			05%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'85	5933	Dec:	0%		
												'91	35799		1%		
												'94	4260		26%		
												'98	1320		2%		

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total	
		1	2	3	4	5	6	7	8	9	1	2	3	4					
Artemisia nova																			
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0		
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0		
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0		
	98	2	-	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	94	23	-	-	-	-	-	-	-	-	-	23	-	-	-	460	12	21	23
	98	8	7	-	-	-	-	-	-	-	-	15	-	-	-	300	11	18	15
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	98	1	-	-	-	-	-	-	-	-	-	1	-	-	-	20			1
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	120			6	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>								
'85		00%			00%			00%											
'91		00%			00%			00%											
'94		00%			00%			00%			-22%								
'98		39%			00%			00%											
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	0%				
												'91	0		0%				
												'94	460		0%				
												'98	360		6%				

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata wyomingensis																		
S	85	36	-	-	-	-	-	-	-	-	36	-	-	-	2400		36	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	85	28	-	-	-	-	-	-	-	-	28	-	-	-	1866		28	
	91	-	1	1	1	-	-	1	-	-	4	-	-	-	266		4	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
M	85	5	-	-	-	-	-	-	-	-	5	-	-	-	333	15 17	5	
	91	16	24	8	-	-	-	-	-	-	47	-	1	-	3200	9 15	48	
	94	20	2	-	-	-	-	-	-	-	22	-	-	-	440	11 20	22	
	98	14	5	-	-	-	-	-	-	-	19	-	-	-	380	17 29	19	
D	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	91	2	-	-	2	-	-	-	-	-	3	-	-	1	266		4	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	3	-	-	-	-	-	-	-	1	4	-	-	-	80		4	
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	160		8	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			+39%							
'91		45%			16%			04%			-88%							
'94		09%			00%			00%			+15%							
'98		19%			04%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	2265	Dec:	3%			
												'91	3732		7%			
												'94	440		0%			
												'98	520		15%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Atriplex canescens																		
Y	85	1	-	1	-	-	-	-	-	-	2	-	-	-	133		2	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	3	1	-	-	-	-	-	-	-	4	-	-	-	80		4	
M	85	9	2	-	-	-	-	-	-	-	11	-	-	-	733	12 12	11	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0	
	94	5	1	3	-	-	1	-	-	-	10	-	-	-	200	6 6	10	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0	
D	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	91	-	-	5	-	-	1	-	-	-	-	-	-	6	400		6	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'85 14%			07%			00%			-57%							
		'91 00%			100%			100%			-50%							
		'94 10%			40%			00%			-60%							
		'98 25%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	932	Dec:	7%			
												'91	400		100%			
												'94	200		0%			
												'98	80		0%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Ceratoides lanata																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	98	2	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
Y	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	91	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	98	3	1	1	3	-	-	-	-	-	8	-	-	-	160		8	
M	85	10	-	-	-	-	-	-	-	-	10	-	-	-	666	5	4	
	91	1	1	1	-	1	1	-	-	-	5	-	-	-	333	4	4	
	94	21	20	-	2	-	-	-	-	-	43	-	-	-	860	4	5	
	98	12	30	13	4	1	-	-	-	-	59	-	-	1	1200	3	5	
D	85	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	91	-	-	-	-	-	1	1	-	-	1	-	-	1	133		2	
	94	13	-	-	-	-	-	-	-	-	8	-	-	5	260		13	
	98	-	1	-	-	-	-	-	-	-	1	-	-	-	20		1	
X	85	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	80			4	
	98	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			-36%							
'91		29%			43%			14%			+58%							
'94		36%			00%			09%			+19%							
'98		48%			20%			01%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	732	Dec:	0%			
												'91	466		29%			
												'94	1120		23%			
												'98	1380		1%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus stenophyllus																		
S	85	8	-	-	-	-	-	-	-	-	8	-	-	-	533		8	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	33	-	-	-	-	-	-	-	-	33	-	-	-	660		33	
	98	36	-	-	-	-	-	-	-	-	36	-	-	-	720		36	
Y	85	15	-	-	-	-	-	-	-	-	15	-	-	-	1000		15	
	91	9	8	1	7	-	-	-	-	-	25	-	-	-	1666		25	
	94	74	-	-	-	-	-	-	-	-	74	-	-	-	1480		74	
	98	137	2	-	1	-	-	-	-	-	140	-	-	-	2800		140	
M	85	11	-	-	-	-	-	-	-	-	11	-	-	-	733	7 11	11	
	91	27	8	-	1	-	-	1	-	-	37	-	-	-	2466	8 13	37	
	94	446	-	-	-	-	-	-	-	-	446	-	-	-	8920	6 14	446	
	98	332	2	-	-	-	-	-	-	-	334	-	-	-	6680	8 14	334	
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	5	-	1	-	-	1	-	-	-	6	-	-	1	466		7	
	94	36	-	-	1	-	-	-	-	-	20	-	-	15	740		37	
	98	72	-	-	-	-	-	-	-	-	57	-	7	8	1440		72	
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	960		48	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	420		21	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			+62%							
'91		23%			04%			01%			+59%							
'94		00%			00%			03%			- 2%							
'98		.73%			00%			03%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	1733	Dec:	0%			
												'91	4598		10%			
												'94	11140		7%			
												'98	10920		13%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Gutierrezia sarothrae																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	3	-	-	-	-	-	-	-	-	-	3	-	-	200		3	
	94	2	-	-	-	-	-	-	-	-	-	2	-	-	40		2	
	98	29	-	-	-	-	-	-	-	-	-	29	-	-	580		29	
Y	85	8	-	-	-	-	-	-	-	-	-	8	-	-	533		8	
	91	60	-	-	12	-	-	-	-	-	-	72	-	-	4800		72	
	94	1	-	-	-	-	-	-	-	-	-	1	-	-	20		1	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	85	22	-	-	-	-	-	-	-	-	-	22	-	-	1466	9 11	22	
	91	347	-	-	28	-	-	8	-	-	-	382	-	1	25533	7 10	383	
	94	51	-	-	2	-	-	-	-	-	-	53	-	-	1060	5 6	53	
	98	6	-	-	-	-	-	-	-	-	-	6	-	-	120	5 6	6	
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	5	-	-	-	-	-	-	-	-	-	2	-	1 2	333		5	
	94	11	-	-	-	-	-	-	-	-	-	6	-	- 5	220		11	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	2020		101	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			+93%							
'91		00%			00%			.86%			-96%							
'94		00%			00%			08%			-91%							
'98		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	1999	Dec:	0%			
												'91	30666		1%			
												'94	1300		17%			
												'98	120		0%			
Opuntia spp.																		
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6 12	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'94		00%			00%			00%										
'98		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'94	0		-			
												'98	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Rosa woodsii																		
M	'85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'98	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	16	0
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
		'85				00%				00%				00%				
		'91				00%				00%				00%				
		'94				00%				00%				00%				
		'98				00%				00%				00%				
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'94	0		-			
												'98	0		-			